

Notice of Allowability

Application No.

10/034,533

Examiner

Carlos Lopez

Applicant(s)

HARRIS ET AL.

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/15/04.
2. ☒ The allowed claim(s) is/are 2-5 and 7-10.
3. ☒ The drawings filed on 21 December 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 1/31/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Adenike Adewuya on 1/31/05.

The application has been amended as follows:

The title was rewritten to read as follows:

Refractories **Method and Apparatus** for Fused Silica Production furnaces

Claim 4 was rewritten to read as follows:

4(Currently Amended). The furnace of claim 2, wherein the foamed refractory **material** has a density less than 1.5 g/cm³.

Claim 5 was rewritten to read as follows:

5(Currently Amended). The furnace of claim 2, wherein the foamed refractory **material** contains iron and sodium impurities less than 10 parts per million.

Claim 7 has been rewritten to read as follows:

7 (Currently Amended). A method of manufacturing a fused silica boule comprising the steps of:

Art Unit: 1731

~~providing a furnace including crown constructed from a foamed refractory material having a network of interconnected pores, wherein the pores in the foamed refractory material have a surface area greater than $0.5 \text{ m}^2/\text{g}$; and~~

introducing a silicon-containing precursor into a flame to produce fused silica particles; and

collecting the particles on a collection surface in a furnace including a crown constructed from a foamed refractory material having a network of interconnected pores, wherein the pores in the foamed refractory material have a surface area greater than $0.5 \text{ m}^2/\text{g}$, and consolidating the particles on the collection surface to form a boule.

Claim 9 was rewritten to read as follows:

9 (Currently Amended). The method of claim 7, wherein the foamed refractory material has a density less than 1.5 g/cm^3 .

Claim 10 was rewritten to read as follows:

10 (Currently Amended). The method of claim 7, wherein the foamed refractory material contains iron and sodium impurities less than 10 parts per million.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the cited prior art fails to disclose or reasonably suggest a fused silica soot production furnace comprising the claimed precursor delivery system, a burner with the claimed crown of

Art Unit: 1731

foamed material having a network of interconnected pores wherein the pores in the foamed refractory have a surface area greater than $0.5 \text{ m}^2/\text{g}$. Nor does the cited prior art disclose or reasonably suggest a method of manufacturing fused silica by introducing a silicon-containing precursor into a flame to produce a fused silica particles and collecting the particles on a collection surface in a furnace having a crown of foamed material having a network of interconnected pores wherein the pores in the foamed refractory have a surface area greater than $0.5 \text{ m}^2/\text{g}$.

The closest prior art, such as Pavlik et al (WO 97/30933) and Pickrell et al (US 6,210,612), fail to teach or reasonably suggest a crown of a fused silica soot production furnace having the claimed foamed material having a network of interconnected pores wherein the pores in the foamed refractory have a surface area greater than $0.5 \text{ m}^2/\text{g}$.

References US 6592787 and US 2004/0110022A1 does disclose a refractory material comprising of interconnected pores but fails to disclose or reasonably suggest the claimed limitation of having a surface area greater than $0.5 \text{ m}^2/\text{g}$.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 1731


CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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